

**WHAT IS CLAIMED IS:**

1. A detector for a vehicle equipped with a heat exchanger, in which a catalyst coating provided in the heat exchanger decomposes a chemical substance in  
5 air passing through the heat exchanger, the detector comprising:  
a sensor that detects a remaining amount of the catalyst coating; and  
a control unit that generates an alarm based upon detection of the sensor,  
wherein a position of detection of the sensor is determined according to a temperature  
characteristic of the heat exchanger.  
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2. A detector according to claim 1, wherein the position of detection of the sensor is determined according to a flow rate of the air passing through the heat exchanger in addition to the temperature characteristic of the heat exchanger.
- 15 3. A detector according to claim 1, wherein the heat exchanger is a radiator, and a temperature distribution of a front surface of the radiator is used as the temperature characteristic of the heat exchanger.
- 20 4. A detector according to claim 1, wherein the heat exchanger is a radiator, and a time integral of temperature distributions of a front surface of the radiator is used as the temperature characteristic of the heat exchanger.
- 25 5. A detector according to claim 1, wherein the position of detection of the sensor is determined so that detection occurs when an amount of decomposition of the chemical substance by an action of the catalyst coating becomes less than a value declared in an application for certification of decomposing performance.